



Application Date : May 8, 1936.

No. 13040/36.

Complete Specification Accepted : Sept. 17, 1936.

COMPLETE SPECIFICATION

Improvements in or relating to Pyrophoric Lighters

We, WALTER PUGH, a British Subject, of 23, Montreal Road, Ilford, Essex, and S. MORDAN & COMPANY, LIMITED, a British Company, of 41, City Road, London, E.C.1, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 This invention relates to improvements in pyrophoric lighters.

The object of the present invention is to provide novel latch releasing means for spring cap pyrophoric lighters.

15 Accordingly, the invention consists in a pyrophoric lighter having a spring urged cap and latching means therefor, characterised in that the latching means comprise a spring urged slide, an operating arm therefor disposed adjacent a manually operable friction wheel or a fluted wheel for operating the same and an element on said slide engaging an element on the cap such that when the slide is moved against the action of its spring, the one element releases the other and the cap flies open.

20 The invention is more particularly applicable to a lighter having the flint disposed externally of the body thereof and arranged parallel thereto, and according to a further feature of the invention there is provided a novel assembly for holding the flint.

30 In order that the invention may be clearly understood and readily carried into effect, a practical embodiment thereof is hereinafter more fully described with reference to the accompanying drawings which are given by way of example only and not of limitation.

In these drawings:—

Figure 1 is a perspective view of the lighter open,

45 Figure 2 is a perspective view of the lighter closed,

Figure 3 is a sectional elevation of the upper part of the lighter, the cap being omitted,

50 Figure 4 is a plan view of the upper part of the lighter, the cap being omitted, and

Figure 5 is a sectional view of the cap and the operating means therefor.

55 Referring now to the said drawings, the

lighter comprises a body *a*, containing cotton wool or other absorbent material, the sides of which are extended as at *a*¹. A serrated striking wheel *b* made fast with a fluted thumb wheel *c* is freely rotatable on a pin or shaft *d* secured to the upper surface *e* of the body *a*. The thumb wheel *c* extends through an aperture in the extension *a*¹ to enable it to be operated by the user's finger or thumb, whilst the extension *a*¹ of the wall prevents the finger or thumb coming into contact with the serrated wheel so that it will not be dirtied thereby. The extension also acts to a certain extent as a wind shield but does not interfere with the burning of the wick due to the portion which is cut away as may be seen from Figure 1.

The wick *f* is arranged in the usual manner and adjacent the serrated wheel *b*.

75 A block *g* suitably secured by screws *g*¹ to the upper surface *e*, is slotted and channelled to receive a bolt *h* and spring *i*. The bolt *h* is provided with a projection *h*¹ by means of which it may be drawn back against the action of the spring *i*, then by rotation of the bolt the projection *h*¹ may be caused to engage in the notch *g*² cut in one side of the slot, to retain the bolt in its retracted position. A flint *j* may now be placed through the enlarged opening into the channel. The projection *h*¹ is now released from the slot *g*² whereby the bolt *h* under the action of the spring *i* urges the flint *j* into contact with the serrated wheel *b*.

85 On its under side the block *g* is recessed throughout part of its length to receive a slide *k* having an operating arm *k*¹ slotted to take about the shaft *d* and adapted, in its normal position, to extend slightly beyond the thumb wheel *c*. The slide *k* is urged outwardly by a spring *l* to its limit position in which the end of the slot in the arm *k*¹ engages with the shaft *d*. A rod or bar *m* projects from the side of the slide, the purpose of which is hereinafter explained.

90 The cap or closure member *n* is pivoted in any suitable manner, for example, between the arms *r*¹ of the member *r* hereinafter referred to. On one side the cap is provided with a depending portion *n*¹ adapted to lie in the cut-away portion of the extension *a*¹ as may be seen from 110

- Figure 2. A snuffer *o* is provided on the cap *n* adapted to take over the wick *f* and it is preferred that this snuffer shall be capable of limited axial movement under the urge of a spring *o*¹ substantially as illustrated. A steel button *p* is also provided on the cap, having a neck portion *p*¹ and a chamfered head *p*². At its pivotal end the cap has a cam portion *n*² with which engages a sliding element *q* arranged in a housing *r* let in through the upper surface *e* into the body *a*. A spring *s* within the housing *r* urges the element *q* outwardly and the action of the latter on the cam portion *n*² causes the cap always to tend to move into the open position as in Figures 1 and 5.
- When the cap is depressed, the portion *p*² of the button *p* engages the rod *m* and causes it to move to the right (as seen in Figure 3). After passing the portion of greatest diameter of the button *p*, the rod engages in the neck *p*¹ and maintains the cap in its closed position (Figure 2).
- To open the cap it is only necessary to move inwardly the arm *k*¹ which may be effected at the same time as commencing to rotate the thumb wheel *c*. If the wick fails to ignite on the first operation of the thumb wheel, the same may be further operated without the necessity of closing the cap, as is the case with an automatic lighter, and even if the cap should inadvertently open in the user's pocket or handbag, there is no danger of ignition.
- The latching means for the cap may be incorporated in a manually operated lighter having a different arrangement of flint holding means and the various details of the invention may be modified without departing from the invention.
- Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—
1. A pyrophoric lighter having a spring urged cap and latching means therefor, characterised in that the latching means comprise a spring urged slide, an operating arm therefor disposed adjacent a manually operable friction wheel or a fluted wheel for operating the same and an element on said slide engaging an element on the cap such that when the slide is moved against the action of its spring, the one element releases the other and the cap flies open.
 2. A pyrophoric lighter as in Claim 1, characterised in that the operating arm is slotted to take about the shaft of the friction wheel and extends, in its normal position, to just beyond said wheel or the fluted wheel for operating the same.
 3. A pyrophoric lighter as in Claims 1 or 2, characterised in that the element on the slide is in the form of a rod or bar and the element on the cap is in the form of a button having a neck portion and a chamfered head.
 4. A pyrophoric lighter as in any of the preceding Claims, characterised in that the flint is received into a channel in a block and is forced into contact with the friction wheel by a spring urged bolt also in said channel and provided with a projection extending through a slot leading into said channel such that the bolt may be drawn back against the action of its spring and retained in its retracted position by rotating it to enable the projection to engage a notch cut in one side of said slot.
 5. A pyrophoric lighter as in Claim 4 characterised in that the under side of the block is recessed and the slide is accommodated in said recess.
 6. A pyrophoric lighter substantially as hereinbefore described and as illustrated in the accompanying drawings.

Dated the 4th day of May, 1936.

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[This Drawing is a reproduction of the Original on a reduced scale.]

